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CONNECTING COMPUTERS TO MLC PORTS

Several times we have been asked if computers can be connected through serial communication lines to ports on the Terminal IMP's Multi-Line Controller (MLC) [related questions about the level of software support provided by the Terminal IMP to such a connection, have also been raised]. In the past we have said, "Please don't!" We now say, "Sure, but will that really help you the way you think it will?"

(1) Connections between computers and IMPs (i.e., the Host interfaces) have been assumed to be error-free. This assumption is justifiable on the basis that the IMP and Host computers were expected to be either in the same room (up to 30 feet of cable) or, via the Distant Host option, within 2000 feet on well-controlled, shielded cables. A connection through common carrier facilities is not comparably free of errors. Usage of common-carrier lines for connecting a terminal to an IMP, including the assumption of a human at the terminal, is a situation in which the typical errors which do occur can be accommodated. Usage of the same wire, with the same typical errors, for a computer-to-computer connection is likely to be a situation in which the errors are unacceptable. The present version of the Terminal IMP does not provide error control either within its hardware or within its software on any ports of the Multi-Line Controller. Further, we feel that computer-to-computer connections over common carrier circuits should employ strong error control, such as that

used on the IMP/IMP circuits, and that attempts to use minimal error control (e.g., character parity) is an undesirable technical choice. Strong error control, with its retransmission scheme, not only would imply significant changes in the Terminal IMP, but a non-trivial hardware/software implementation at the remote computer end of the circuit.

(2) Because the Terminal IMP has many obligations, the share of its bandwidth which can be given to a Host coming in over the MLC will be small.

(3) The command language provided at a port of the Multi-Line Controller was designed with terminals and people in mind. It provides very few of the capabilities which a computer requires in order to effectively utilize the communication network. For example, only a single pair of connections can be made from a given Terminal IMP port; Host computers generally desire a larger number of simultaneous connections to other Hosts on the network. Assuming the present Host/Host protocols, such a Host could not conveniently act as a server.

If, despite these potential difficulties, connection of a computer to the network through an MLC port appears to be useful, BBN has no objection. In fact, we would be extremely interested in hearing about actual experience with this type of network connection.

AMcK:jm